

REMARKS

Claims 1, 37, 76 and 77 have been amended.

Applicants respectfully request further examination and reconsideration of claims 1-61, 63-71 and 76-79 still pending in the application.

The first Office Action mailed October 3, 2003 has been carefully considered and indicates that:

- a) Claims 12, 37, and 47 are objected to;
- b) Claims 1, 5, 11, 13, 14, 24, 26, 29, 33, 35, and 37-41 are rejected under 35 U.S.C. § 102(b) as being anticipated by Dangelo et al.;
- c) Claim 76 is rejected under 35 U.S.C. § 102(b) as being anticipated by Ovshinsky et al.;
- d) Claims 78 and 79 are rejected under 35 U.S.C. § 102(b) as being anticipated by Shikata et al.;
- e) Claims 8, 9, 25, 42, 43, and 77 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Dangelo et al.;
- f) Claim 23 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Dangelo et al. in view of Huang et al.;
- g) Claims 69-71 are allowed; and
- h) Claims 2-4, 6, 7, 10, 15-22, 27, 28, 30-32, 34, 36, 44-46, and 48-68 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicants respectfully appreciate the Examiner's allowance of claims 69-71 and the allowable subject matter of Claims 2-4, 6, 7, 10, 15-22, 27, 28, 30-32, 34, 36, 44-46, and 48-68.

In response to the Examiner's objection to claims 12, 37, and 47:

1. Regarding claims 12 and 47, applicants respectfully draw the Examiner's attention to page 12, ¶ [0043] of the application, where "EDIF" is described as:

"EDIF: Electronic Design
Interchange Format that
includes the hierarchy of the
input schematic."

2. Regarding claim 37, applicants have amended claim 37, line 3, to change "another" to --at a--, as suggested by the Examiner, and, have amended claim 37, line 2, to change "necessitates" to --comprises--, also as suggested by the Examiner.

In view of the reference made *supra* to page 12, ¶ [0043] of the application, the amendments made *supra* to claim 37, line 2, to change "necessitates" to --comprises-- and to claim 37, line 3, to change "another" to --at a--, applicants respectfully submit that the Examiner's grounds for the objection to claims 12, 37, and 47 no longer appear to be applicable and applicants therefore respectfully request that the Examiner withdraw this objection.

In response to the Examiner's rejection of claims 1, 5, 11, 13, 14, 24, 26, 29, 33, 35, and 37-41 under 35 U.S.C. § 102(b) as being anticipated by Dangelo et al., applicants have amended claim 1 to include the features of claim 62 which was objected to but would be allowable if rewritten in independent form including the limitations of the base claim. Hence claim 1 should now be in condition for allowance.

Regarding claims 5, 11, 13, 14, 24, 26, 29, 33, 35, and 37-41, applicants respectfully submit that since claims 5, 11, 13, 14, 24, 26, 29, 33, 35, and 37-41 ultimately depend from claim 1, claims 5, 11, 13, 14, 24, 26, 29, 33, 35, and 37-41 should be

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allowable for at least the same reasons claim 1 is allowable.

In response to the Examiner's rejection of claim 23 under 35 U.S.C. § 103(a) as being unpatentable over Dangelo et al. in view of Huang et al., applicants respectfully submit that since claim 23 is dependent upon claim 1, claim 23 should be allowable for at least the same reasons claim 1 is allowable.

In response to the Examiner's rejection of claim 76 under 35 U.S.C. § 102(b) as being anticipated by Ovshinsky et al., applicants have amended the preamble of claim 76 to put it into method form.

Since applicants have overcome the Examiner's "product-by-process" issue by amending the preamble of claim 76 to put it into method form, and, since the Examiner has admitted at page 5, ¶ 5, sub ¶ 3, of the Office Action that "Ovshinsky et al. does[sic] not teach a programmable logic device, wherein the configuration data is generated as recited in claim 76 of the instant application", applicants respectfully submit that claim 76 is now allowable.

In response to the Examiner's rejection of claims 8, 9, 25, 42, 43, and 77 under 35 U.S.C. § 103(a) as being unpatentable over Dangelo et al., regarding claim 77, applicants respectfully submit that pursuant to 37 CFR § 1.111(c), claim 77 describes the following advantageous distinctive features that distinguish over and avoid the prior art:

- a) "A method for providing modular design in a programmable logic device";
- b) "partitioning a top-level logic design having a plurality of paths into a plurality of modules, each of the modules having a plurality of ports for connecting to other modules, wherein each module is placed and routed independently of the other modules in the design;

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Regarding advantageous distinctive feature a) of claim 77 discussed supra, contrary to the Examiner's statement made at page 7, ¶ 1, lines 1-2 of the Office Action, Dangelo et al. do not describe "A method for providing modular design in a programmable logic device" as required by advantageous distinctive feature a) of claim 77 discussed supra, but rather describe at col. 24, lines 45-51 thereof partitioning a system into pieces, some of which can be indivisible units, such as a memory modules (e.g. ROM, EPROMS, FPGA). Dangelo et al. are silent as to a method of partitioning these into smaller pieces, but rather describe a partitioning of modules within the ASIC part of the design. A more broad disclosure at col. 4, line 45 thereof states:

"Finally the design is input
to existing software systems
which control the physical
implementation of the design,
such as an ASIC device."

Dangelo et al. describe a single netlist with all of the modules merged (composition step) prior to physical layout, as opposed to not doing this composition step prior to physical implementation (place and route) but rather that there are a plurality of netlists, one per module, that are used as input to the physical implementation step.

Hence Dangelo et al. neither disclose nor teach advantageous distinctive feature a) of claim 77 and for at least this reason alone claim 77 should be allowable.

Regarding advantageous distinctive feature b) of claim 77 discussed supra, contrary to the Examiner's statement made at page 7, ¶ 2, lines 2-5 of the Office Action, it would not have been obvious to include a plurality of ports for connecting the modules since it is intended for the modules to be connected and simulated together before reduction to practice because "...a plurality of paths into a plurality of modules, each of the modules having a plurality of ports for connecting to other

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modules, wherein each module is placed and routed independently of the other modules in the design" as required by advantageous distinctive feature b) of claim 77 is not for having the modules connected and simulated together before reduction to practice as stated at page 7, ¶ 2, lines 4-5 of the Office Action, but rather for allowing each module to be placed and routed independently of the other modules in the design, with the ports on each module being identified. Hence for at least this reason alone claim 77 should be allowable.

Regarding claims 8, 9, 25, 42, and 43, applicants respectfully submit that since claims 8, 9, 25, 42, and 43 ultimately depend from claim 1, claims 8, 9, 25, 42, and 43 should be allowable for at least the same reasons claim 1 is allowable.

In view of the arguments presented supra, applicant respectfully submits that the Examiner's grounds for the rejection of claims 8, 9, 25, 42, 43, and 77 under 35 U.S.C. § 103(a) as being unpatentable over Dangelo et al. no longer appear to be applicable and applicant therefore respectfully requests that the Examiner withdraw this rejection.

In response to the Examiner's rejection of claims 78 and 79 under 35 U.S.C. § 102(b) as being anticipated by Shikata et al., applicants respectfully submit that pursuant to 37 CFR § 1.111(c), claim 78 discloses the following advantageous distinctive features that distinguish over and avoid the prior art:

- a) "drawing a boundary around a portion of the design to enclose elements of the design within the boundary, thereby forming a module";
- b) "drawing a second boundary around a second portion of the design to enclose a second group of elements of the design, thereby forming a second module"; and
- c) "repeating until all elements

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of the design are enclosed
within a module"

With the arrangement of advantageous distinctive feature a) of claim 78 discussed supra, the design and implementation of each module can be done separately since the boundary is used to separate elements in one module from the other module.

With the arrangement of advantageous distinctive feature b) of claim 78 discussed supra, the design can be partitioned, i.e., first the boundary around the first module is created, then the second, then the third, etc.

With the arrangement of advantageous distinctive feature c) of claim 78 discussed supra, each module is defined with a fixed boundary in an absolute location by the steps being repeated. Once all elements are enclosed, the initial floorplanning is complete.

Regarding advantageous distinctive feature a) of claim 78 discussed supra, contrary to the Examiner's statement made at page 6, line 1 of the Office Action, Shikata et al. do not disclose "drawing a boundary around a portion of the design to enclose elements of the design within the boundary, thereby forming a module" as required by advantageous distinctive feature a) of claim 78, but rather disclose a method of forming a free boundary which would imply an undefined shape and a requirement that the module be movable.

Hence Shikata et al. neither disclose nor teach advantageous distinctive feature a) of claim 78 and for at least this reason alone claim 78 should be allowable.

Regarding advantageous distinctive feature b) of claim 78 discussed supra, contrary to the Examiner's statement made at page 6, line 2 of the Office Action, Shikata et al. do not disclose "drawing a second boundary around a second portion of the design to enclose a second group of elements of the design, thereby forming a second module" as required by advantageous distinctive feature b) of claim 78, but rather disclose boundaries that are free, floating, and not of defined sizes.

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Further Shikata et al. are silent as to forming a second module. Absent such a disclosure, one cannot say that Shikata et al. disclose advantageous distinctive feature b) of claim 78.

Hence Shikata et al. neither disclose nor teach advantageous distinctive feature b) of claim 78 and for at least this reason alone claim 78 should be allowable.

Regarding advantageous distinctive feature c) of claim 78 discussed supra, contrary to the Examiner's statement made at page 6, line 3 of the Office Action, Shikata et al. are silent as to disclosing "repeating until all elements of the design are enclosed within a module" as required by advantageous distinctive feature c) of claim 78. Absent such a disclosure, one cannot say that Shikata et al. disclose advantageous distinctive feature c) of claim 78.

Hence Shikata et al. neither disclose nor teach advantageous distinctive feature c) of claim 78 and for at least this reason alone claim 78 should be allowable.

Regarding claim 79, applicants respectfully submit that since claim 79 depends from claim 78, claim 79 should be allowable for at least the same reasons claim 78 is allowable.

In view of the arguments presented supra, applicants respectfully submit that the Examiner's grounds for the rejection of claims 78 and 79 under 35 U.S.C. § 102(b) as being anticipated by Shikata et al. no longer appear to be applicable and applicants therefore respectfully request that the Examiner withdraw this rejection.

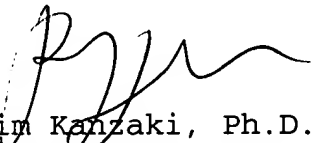
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CONCLUSION

All claims should now be in condition for allowance and a Notice of Allowance is respectfully requested.

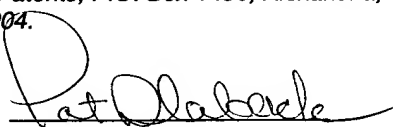
If there are any questions, the applicants' attorney can be reached at Tel: 408-879-6149 (Pacific Standard Time).

Respectfully submitted,


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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450, on March 2, 2004.

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Name


Signature